UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 HANFORD PROJECT OFFICE
712 SWIFT BOULEVARD, SUITE 5
RICHLAND, WASHINGTON 99352

November 26, 1996

Jeff Bruggeman
Department of Energy
Richland Operations Office
P.O. Box 550, MS H0-12
Richland, WA 99352

Re: 233-S Plutonium Concentration Facility Characterization Plan - Non-Process Areas

Dear Mr. Bruggeman:

The U.S. Environmental Protection Agency and their contract team, Gannett Fleming/Hilbert Associates, have completed the review of the document *233-S Plutonium Concentration Facility Characterization Plan - Non-Process Areas*, (DOE/RL-96-86 Decisional Draft, October 1996). ✓

An electronic version of the comments has been forward via cc:mail for your convenience.

If you have any questions or concerns regarding these comments, please contact me at (509) 376-4919.

Sincerely,

Pamela S. Innis
233-S Project Manager

Enclosure

cc: Administrative Record, REDOX
Tom Tobin, Gannett Fleming

INTRODUCTION

The U.S. Environmental Protection Agency and their contract team, Gannett Fleming/Hilbert Associates, have completed the review of the document "233-S Plutonium Concentration Facility Characterization Plan - Non-Process Areas" (DOE/RL-96-86 Decisional Draft, October 1996). This characterization plan defines the sampling and analytical requirements for six areas within the 233-S facility. The characterization plan is intended to comply with data quality objectives and all waste characterization and disposal requirements.

The following comments are based on a review of the subject draft considering the background information provided in current data quality objective, safety analysis, and neutron survey documents, and the general expectations for a comprehensive characterization plan to support decommissioning and waste disposal.

GENERAL COMMENTS

1. The purpose of the Characterization Plan is stated as supporting decontamination activities and disposal of waste. Section 7.0 of the document "233-S Plutonium Concentration Facility Data Quality Objectives", BHI-00832, dated August 1996, stated that a radiological survey and samples are needed to support decommissioning activities. The Characterization Plan does not address the radiological survey requirements, or reference existing survey data meeting the needs of the decommissioning effort. A comprehensive radiological survey data base is necessary to design the remedial or decommissioning methods, and assess the proposed operation from an EH&S perspective. This Characterization Plan is a partial plan and has as its principle focus characterization information for waste disposal. A complete Characterization Plan would provide requirements for the needed radiological survey information (radiation type, loose/fixed condition, instrumentation/detector, MDAs, sampling/survey methods, records, etc.).

2. Available information should be provided concerning the composition of the equipment and associated piping to determine if additional waste characterization data is necessary for these items.

SPECIFIC COMMENTS

Section 1.1, page 3

A brand name paint, Amercoat #88, is identified as the contaminant fixing agent used in the non-process area. In order to determine any waste concerns with this fixative, manufacturing information should be provided.

Section 3.1, page 4

The responsibilities section is general with regards to specific organization responsibilities. Some responsibilities are duplicated and others missing (i.e., QA/QC). This section lacks a level of completeness for a characterization plan document. It is important to delineate and clearly identify the principle organization responsibilities and appropriate functional responsibilities.

Section 5, page 6

This section should specify the participants (or suggested participants) to ensure benefits are derived from pre-job meetings. Also, work debriefings are important communication vehicles that contribute to the overall success of work evolutions in contaminated/hazardous environments.

Section 6.1, page 6

Sampling procedures should be identified or referenced for each type of material specified in this section.

References should be provided for the information gathered during the facility walkdown and for the historical documentation and DQO process specified to justify the logic of the sample points identified.

The oil sample description lacks detail or specifics (nor are these specifics covered in a separate section under sampling). Since a composite is specified, one should provide information on the composite weighting decision (i.e., desired volume per reservoir or piece of equipment, mixing ratio, where/who composites, etc.). If specific sampling SOPs are to be prepared, they should be referenced, and the key objectives provided. Additionally, the justification for use of composite samples versus grab samples should be identified.

The information provided concerning the L-1-A Tank sampling does not specify the nature of the material to be sampled.

The composite paint sample lacks detail or specifics. The composite will represent what type of weighting (biased to high radioactivity locations, paint color, paint type, random grid, specific component or wall locations, etc.). Section 13.0 of the document "233-S Plutonium Concentration Facility Data Quality Objectives", BHI-00832, dated August 1996, specifies that the full set of radionuclide analyses will be performed on the six paint composites, not just the sample from the pipe gallery (also, there appears to be inconsistency between Sections 12.2 and 13.0 of the DQO document).

The drain lines identified for sampling do not provide information on the target media or nature of the sampling. Has sampling been performed in downstream sections of the drain or connecting sewer line, or will it be considered?

The paragraphs for the electrical junction boxes and control panel instruments identify that the smear with the greatest amount of contamination will be analyzed. It is not clear how a constituent range will be identified for waste disposal profiles.

The last bullet identifies areas for additional sampling. The paragraph goes on to specify if liquids are present that samples will be obtained. Sampling of residues that potentially collect in these areas or scale from piping should be considered.

Table 1, page 8

Table 1 is not consistent with Section 13.0 of the Data Quality Objectives (DQO) document, BHI-00832, dated August 1996. Five paint sample composites do not specify the alpha isotopic set of analyses as stated in Section 13.0 of the DQO document. The floor drain sample specifies metal analyses in the table, but these are not specified in the DQO document. Two floor drain locations are identified, but Table 1 suggests a single composite for these drains. Is this

intended? These are drains in different areas and the contaminant levels may be quite different. Therefore, a composite of these drains is (most likely) not appropriate.

Section 6.2, page 10

The key element in sample identification is to ensure the unique sample number is accurately cross referenced to the sample location and description.

Section 6.4, page 10

The chain of custody form is specified to be filled out at the time of sampling. However, when performing sampling in hazardous or contaminated environments, alternate methods are employed to ensure sample identity and documentation are directly connected. This should be covered and spelled out in a sampling SOP. Handling of field survey logs and field logbooks presents similar issues.

Table 2, page 12

Tables 1 and 2 do not provide a complete and clear definition of the sampling and analytical requirements needed to meet the objectives and scope of the plan. There are samples representing at least three media types (e.g., solid, liquid and technical smears). Table 2 attempts to define the requirements for all sample types and thus generates confusion relative to preservation (e.g., are paint chip samples intended to be preserved in HNO3?), sample size, holding times and minimum detectable concentration (MDC). A clear definition of the location, number of samples, media type, required weight to achieve analytical objectives, and the MDC required for the specific sample type/media is required. The MDC will (in general) be media and sample size specific (e.g., a technical smear will have a quite different MDC compared to paint chip samples). It is not possible to judge the adequacy of the plan to meet the MDCs and characterization objectives without the specifics for each sample type.

Table 2 lists "Activity Scan" as an analysis, yet this is not defined in the characterization plan or specified in the DQO document. The term "Required Detection Limits" should be defined and specified with a confidence level (e.g., 95%). Various quantities are used to define the method sensitivity or it's ability to detect the presence of an attribute; they must clearly define the MDC or equivalent parameter to ensure sampling and laboratory analyses meet characterization objectives.

The gamma spectrometric analysis should include Am-241 as a principle nuclide (because it can also be used as a measure of Pu contamination); also, Np-237 should be included. These isotopes provide information on the principal and potential contaminant sources of concern, and can be detected/measured in gamma spectrometric analyses.

The methods listed in the "Reference Methods" column should reference the pertinent procedures' document. The "Container/Volume" column is confusing and not explicit (see earlier comments on sample type, media and size). No characterization method is specified for asbestos.

Section 8.2, page 13

The requirement for laboratory or field sampling "blanks" is not mentioned. The use of laboratory replicates and duplicates, and field duplicates is not clearly specified. The frequency of duplicates is dependent on the method and the number and timing of sample analyses. These

requirements should be specified in the sampling and analytical specification portion of the characterization plan. This section should also state that the detection limit (MDC, or appropriate parameter) will be maintained at the specified confidence interval, if sample weights/volumes are changed.

Section 9.1, page 13

The analytical results reporting section should be more specific relative to what information is required. For example, all results shall include a quoted error and the MDC at the specified confidence levels. Also, it is important to review with the laboratory the sample and analytical requirements, and the associated validation process prior to sampling and submission of samples.

Section 10.0, page 13

It is unclear from the identified reference, how the waste generated during sampling activities will be handled. EPA currently has the *Environmental Investigations Procedures* document but not the field support document.

It is recommended that waste generated during investigations at 233-S be handled as investigation derived waste as per previous agreements between EPA, Ecology and DOE. It is also recommended that the sampling plan specifically state that this waste will be disposed of in the ERDF, provided that it satisfies the waste acceptance criteria. Waste that does not meet the waste acceptance criteria shall be treated accordingly and disposed of in the ERDF or handled in manner agreed to by both EPA and DOE.